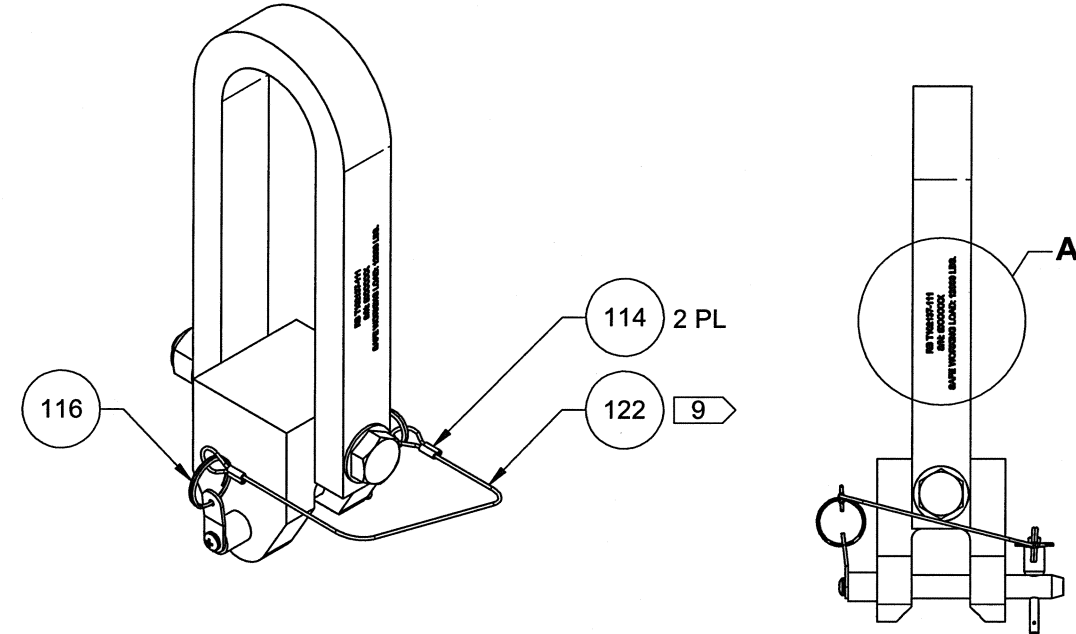


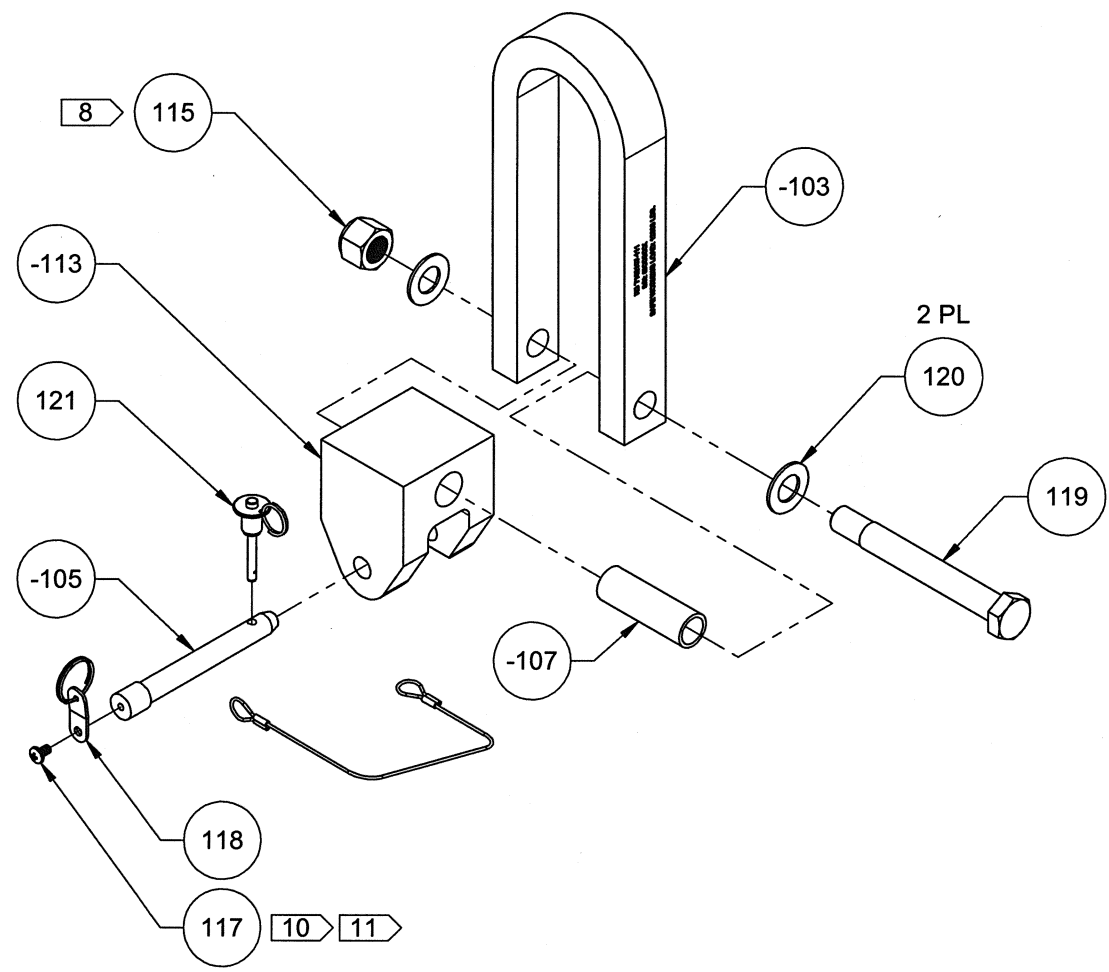
ITEM #	QTY	PART #	PART TITLE
-103	1	RB T102137-111-103	STRAP
-105	1	RB T102137-111-105	PIN
-107	1	RB T102137-111-107	SLEEVE
-113	1	RB T102137-111-113	CLEVIS
114	2	McMaster#3896T31 OR EQUIV.	ALUMINUM WIRE ROPE COMPRESSION SLEEVE 1/16" DIA. X 3/8" LG.
115	1	McMaster#90630A165 OR EQUIV.	GRADE 8 STEEL NYLON INSERT LOCKNUT 5/8"-18 X 3/4" HT.
116	1	McMaster#90905A655 OR EQUIV.	316 SS SPLIT RING 15/16" ID. X 1-1/16" OD. X 1/8" THK.
117	1	McMaster#91772A826 OR EQUIV.	18-8 SS PHILLIPS PAN HEAD SCREW #10-32 X 5/16" LG.
118	1	McMaster#97840A460 OR EQUIV.	18-8 SS TAB FOR WIRE ROPE LANYARD 1.40" LG. X 1/2" WIDTH. X 1/16" THK.
119	1	AN10-47A	BOLT
120	2	NAS1149F1063P	WASHER
121	1	NAS1333S6S10D	QUICK RELEASE PIN
122	1	CARR-LANE#CL-2-C	NYLON COATED STEEL LANYARD 1/16" DIA.





RB T102137-111 LIFTING TOOL

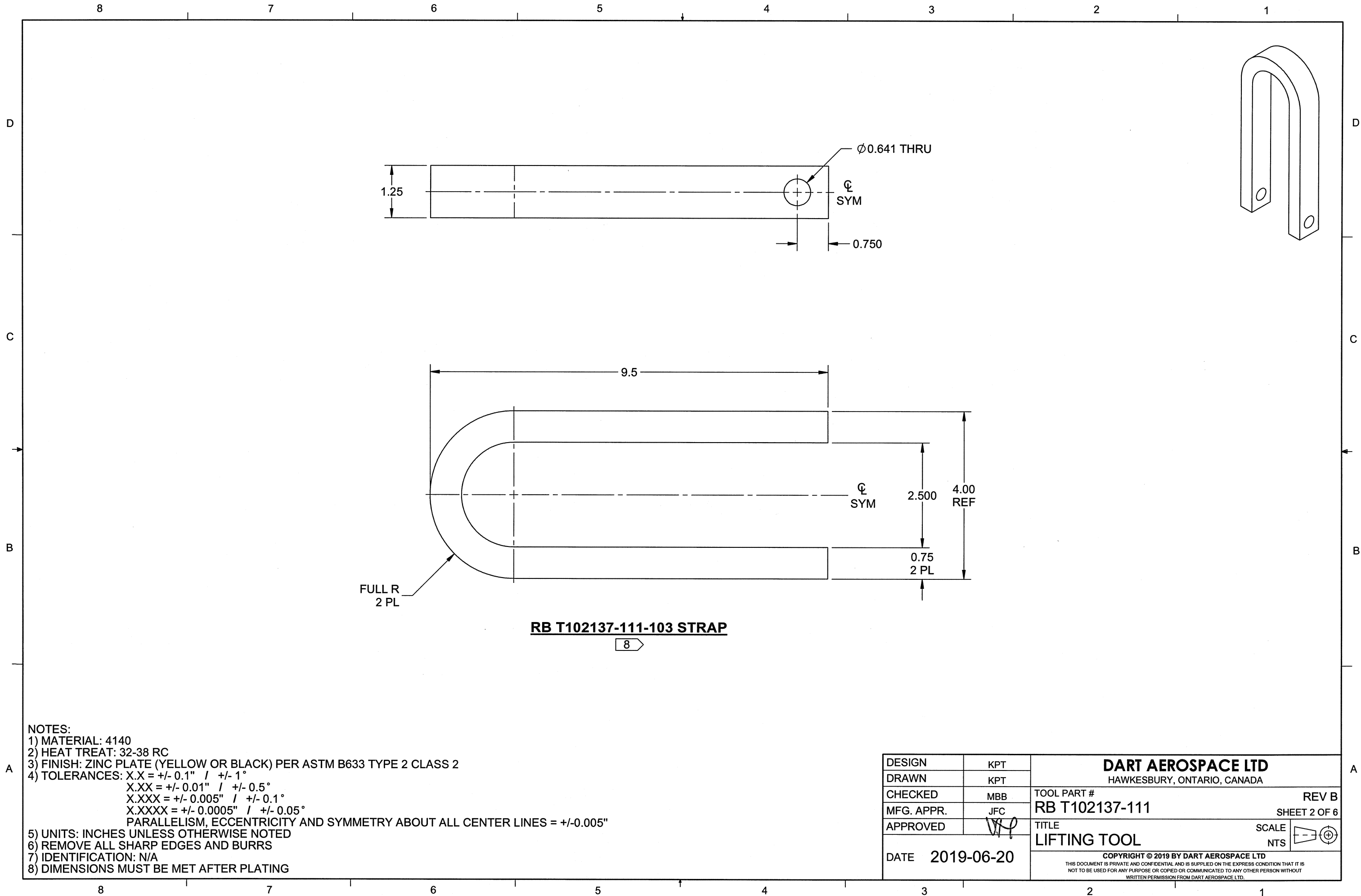
RB T102137-111  
S/N: SXXXXX  
SAFE WORKING LOAD: 12000 LBS.

DETAIL A



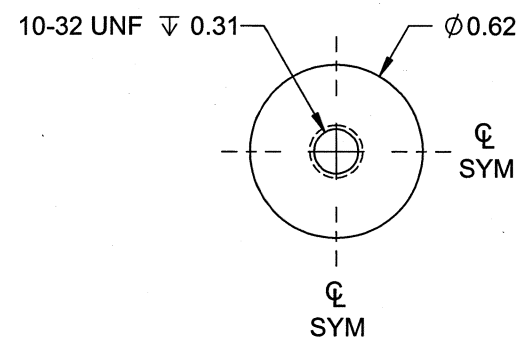
- NOTES:
- 1) MATERIAL: N/A
  - 2) HEAT TREAT: N/A
  - 3) FINISH: N/A
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) IDENTIFICATION: LASER ENGRAVE, AS SHOWN
  - 7) ASSEMBLE AS SHOWN
  - 8) TIGHTEN NUT UNTIL IT CONTACTS SURFACE, ENSURE 1-4 THREADS IN SAFETY
  - 9) ASSEMBLED LANYARD LENGTH MUST BE 10" +/- 1", LANYARD MUST MOVE FREELY WHEN INSTALLING/REMOVING ITEM 121
  - 10) APPLY RED THREADLOCKER LOCTITE 263/262 ON THREADS OF ITEM 117 THEN ASSEMBLE WITH ITEM -105, AND REMOVE EXCESS
  - 11) INSTALL ITEM 117 HAND TIGHT
  - 12) THE TOOL ASSY MUST BE PACKAGED WITH A DESICCANT BAG INTO A TIGHT FITTING SEALED PLASTIC BAG

B	SEE PREVIOUS REVISION FOR MORE INFORMATION UPDATED DRAWING TEMPLATE ITEM -111 WAS NAS6610-64 IS ITEM 119 AN10-47A ITEM -131 WAS MS20002C10 IS ITEM 120 NAS1149F1063P ITEM -115 WAS NAS1291-10 IS ITEM 115 McMaster#90630A165 OR EQUIV. ITEM -117 WAS MCMASTER-CARR #90272A238 IS ITEM 117 McMaster#91772A826 OR EQUIV. REMOVED ITEMS -119, -125, AND -129	19-670	KPT
	-103 MATERIAL WAS 4140/4142 IS 4140. FINISH WAS CAD PLATE YELLOW IS ZINC PLATE YELLOW. DIM WAS $\phi$ .6260-.6245 IS $\phi$ 0.641. DIM WAS (1.25) IS 1.25. REMOVED ENGRAVING NOTES AND 0.63 DIM.		
	-105 MATERIAL WAS 4140/4142 IS O1. FINISH WAS CAD PLATE YELLOW IS ZINC PLATE YELLOW. HEAT TREAT WAS RC 46-50 IS 48-52 RC. DIM WAS $\phi$ .194 IS $\phi$ 0.196. DIM WAS 10-24 UNC $\nabla$ .50 IS 10-32 UNF $\nabla$ 0.31. REMOVED .63 DIM. ADDED 4.00 DIM. ADDED CYLINDRICITY GD&T TOLERANCE, ADDED R0.008 MAX DIM		
	-107 MATERIAL WAS 4140/4142 IS 4140. FINISH WAS CAD PLATE YELLOW IS ZINC PLATE YELLOW. HEAT TREAT WAS RC 32-37 IS 32-38 RC. DIM WAS $\phi$ .627+.000/-0.002 IS $\phi$ 0.641. DIM WAS 2.500+.000/-0.010 IS 2.493-2.488		
	-113 MATERIAL WAS 4140/4142 IS 4140. FINISH WAS CAD PLATE YELLOW IS ZINC PLATE YELLOW. DIM WAS 2.38 IS 2.493-2.488. DIM WAS $\phi$ .504-.501 IS $\phi$ 0.510-0.506. REMOVED .25, $\phi$ .086 $\nabla$ 0.75, 2.00, 1.19, .629, AND 1.38 DIMS. REMOVED ENGRAVING NOTE.		
REV.	DESCRIPTION	ECN #	BY
DESIGN	KPT	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	MBB	TOOL PART # RB T102137-111 REV B SHEET 1 OF 6	
MFG. APPR.	JFC		
APPROVED		TITLE LIFTING TOOL SCALE NTS 	
DATE	2019-06-20		
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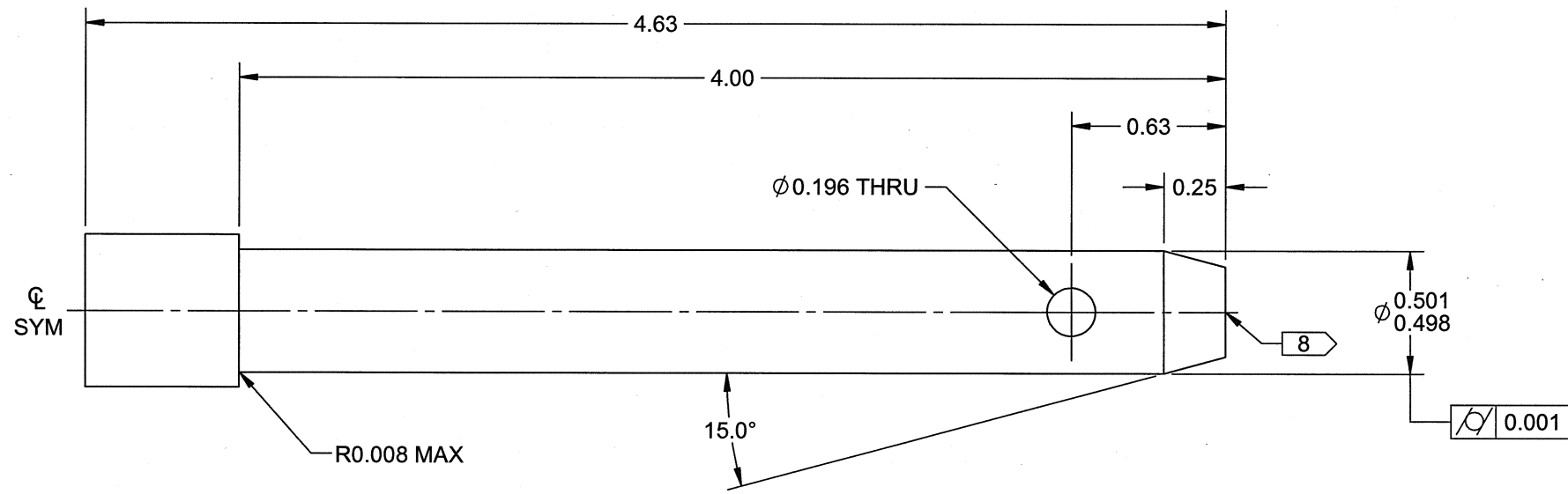


NOTES:  
1) MATERIAL: 4140  
2) HEAT TREAT: 32-38 RC  
3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) REMOVE ALL SHARP EDGES AND BURRS  
7) IDENTIFICATION: N/A  
8) DIMENSIONS MUST BE MET AFTER PLATING

DESIGN	KPT	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	MBB	TOOL PART #	REV B
MFG. APPR.	JFC	<b>RB T102137-111</b>	SHEET 2 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DATE 2019-06-20		<b>LIFTING TOOL</b>	NTS
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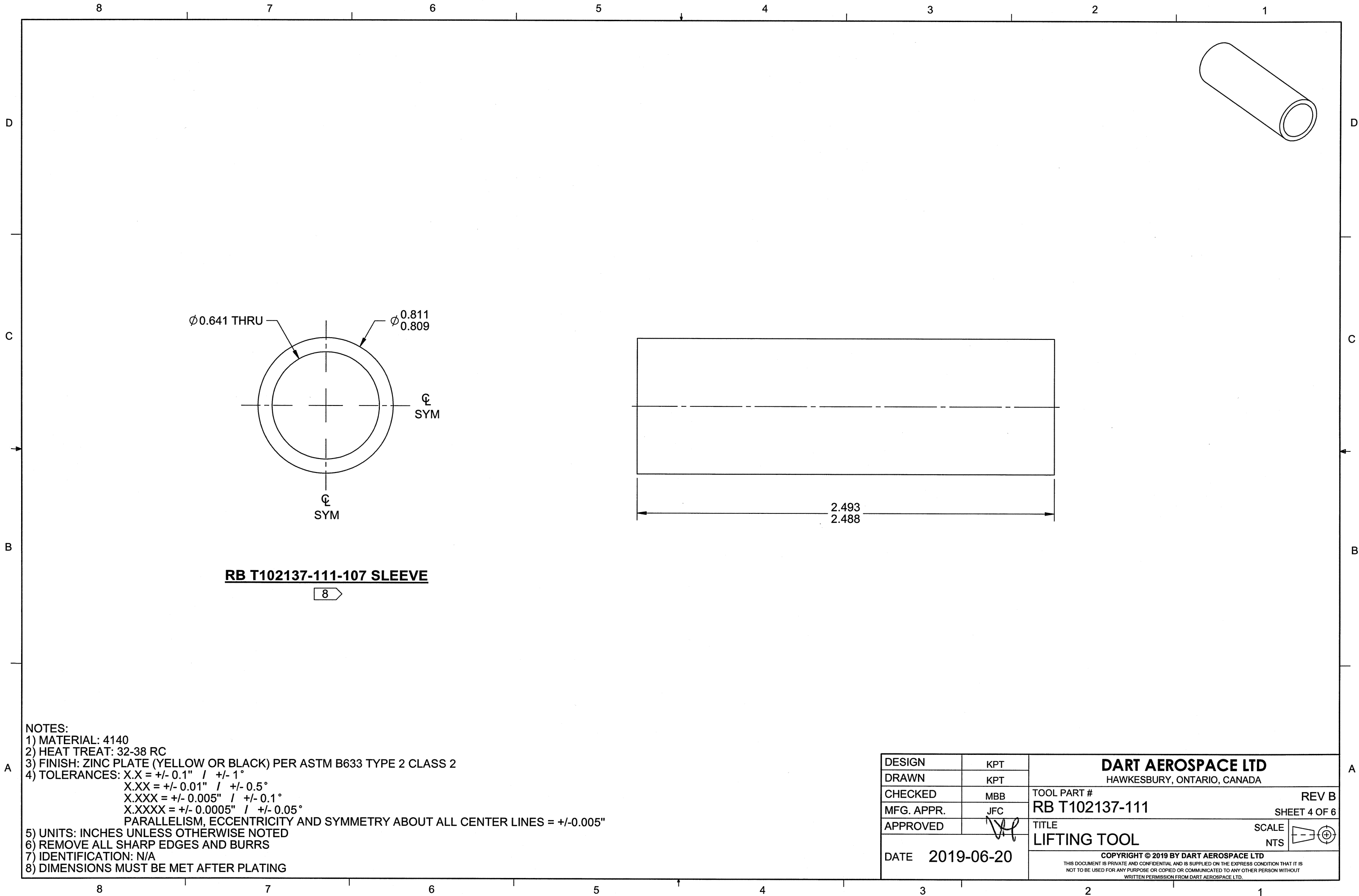


**RB T102137-111-105 PIN**





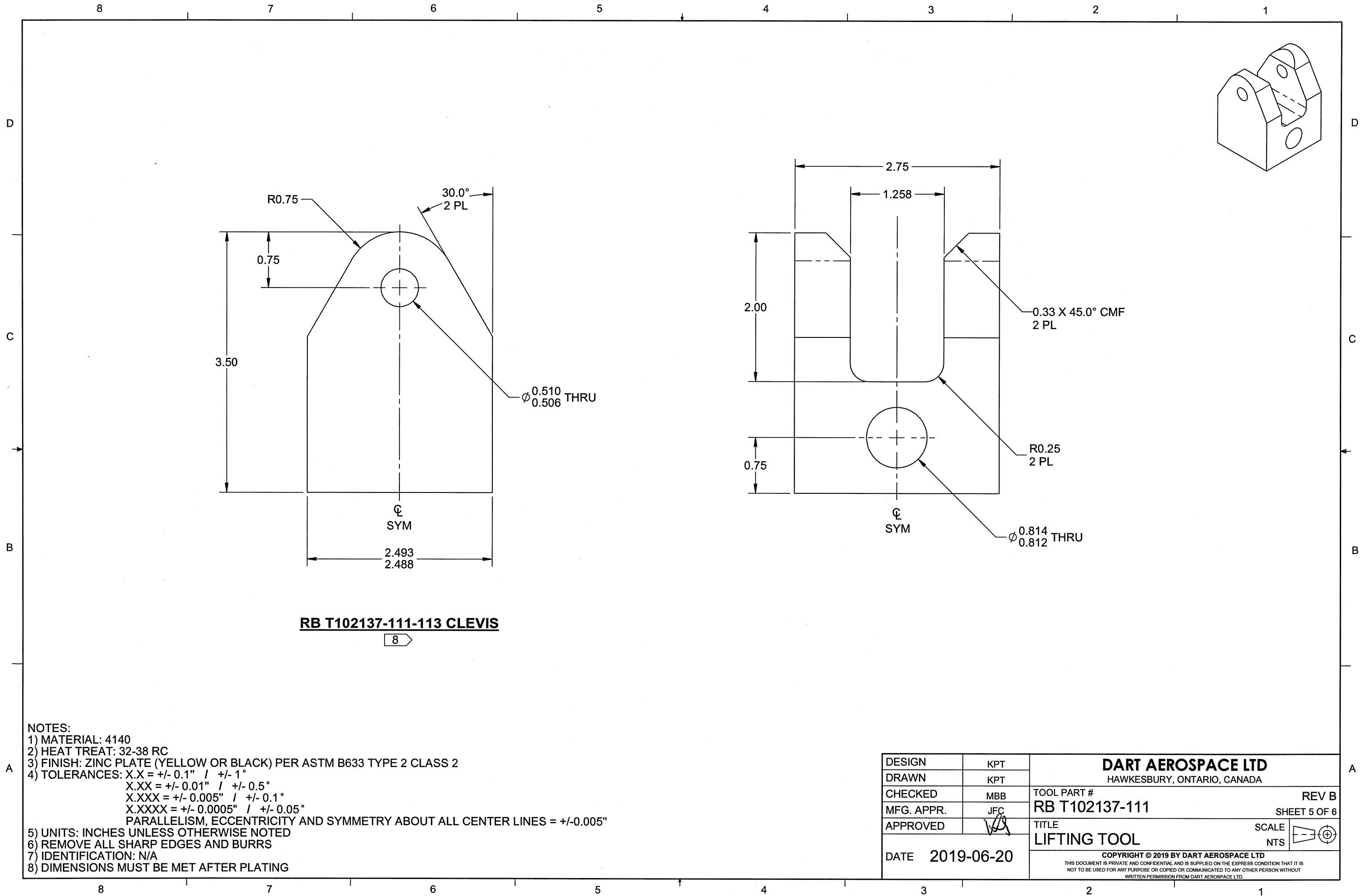
- NOTES:
- 1) MATERIAL: O1
  - 2) HEAT TREAT: 48-52 RC
  - 3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2
  - 4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
  - 5) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 6) REMOVE ALL SHARP EDGES AND BURRS
  - 7) IDENTIFICATION: N/A
  - 8) CENTER DRILL IS ACCEPTABLE
  - 9) DIMENSIONS MUST BE MET AFTER PLATING

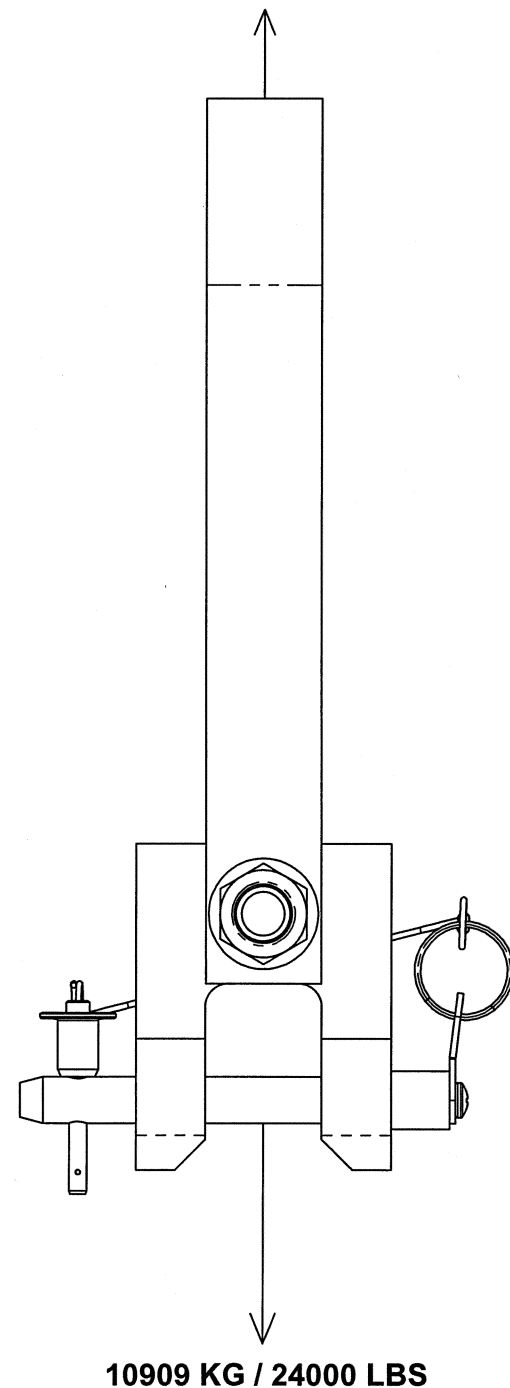
DESIGN	KPT	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	MBB	TOOL PART #	REV B
MFG. APPR.	JFC	RB T102137-111	SHEET 3 OF 6
APPROVED		TITLE	SCALE
DATE 2019-06-20		LIFTING TOOL	NTS
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NOTES:  
1) MATERIAL: 4140  
2) HEAT TREAT: 32-38 RC  
3) FINISH: ZINC PLATE (YELLOW OR BLACK) PER ASTM B633 TYPE 2 CLASS 2  
4) TOLERANCES: X.X = +/- 0.1" / +/- 1°  
X.XX = +/- 0.01" / +/- 0.5°  
X.XXX = +/- 0.005" / +/- 0.1°  
X.XXXX = +/- 0.0005" / +/- 0.05°  
PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/-0.005"  
5) UNITS: INCHES UNLESS OTHERWISE NOTED  
6) REMOVE ALL SHARP EDGES AND BURRS  
7) IDENTIFICATION: N/A  
8) DIMENSIONS MUST BE MET AFTER PLATING

DESIGN	KPT	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	MBB	TOOL PART #	REV B
MFG. APPR.	JFC	RB T102137-111	SHEET 4 OF 6
APPROVED		TITLE	SCALE
DATE 2019-06-20		LIFTING TOOL	NTS 
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10909 KG / 24000 LBS

#### FIRST ARTICLE WEIGHT TEST



1. AFTER INSPECTION, PLACE LIFTING TOOL IN AN APPROPRIATE FIXTURE AND USE THE QUICK RELEASE PIN TO LOCK THE PIN INTO PLACE. ATTACH THE LIFTING TOOL TO AN APPROPRIATE TEST WEIGHT OF 10909 KG / 24000 LBS.
2. LIFT WEIGHT FOR AT LEAST 5 MINUTES, CONTINUALLY CHECKING FOR CRACKS, DEFLECTION, OR DISTORTION
3. REMOVE WEIGHT AND RE-INSPECT TOOL, CHECKING FOR STRESS CRACKS, BENDING, OR DISTORTIONS.

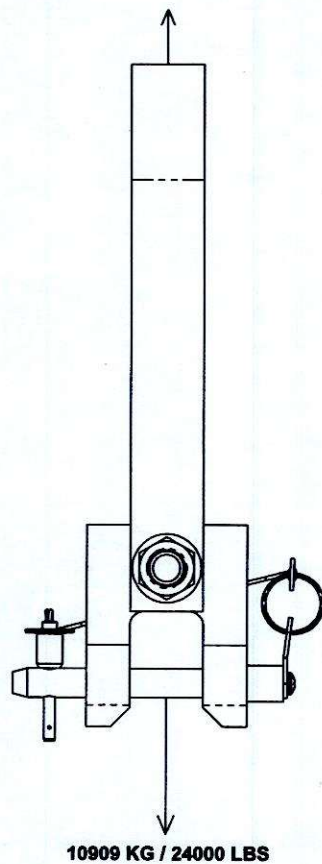
INSPECTOR: \_\_\_\_\_

TESTER: \_\_\_\_\_

S/N: \_\_\_\_\_

DATE: \_\_\_\_\_

DESIGN	KPT	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	KPT		
CHECKED	MBB	TOOL PART #	REV B
MFG. APPR.	JFC	RB T102137-111	SHEET 6 OF 6
APPROVED		TITLE	SCALE
DATE 2019-06-20		LIFTING TOOL	NTS 
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# **FIRST ARTICLE WEIGHT TEST**

1. AFTER INSPECTION, PLACE LIFTING TOOL IN AN APPROPRIATE FIXTURE AND USE THE QUICK RELEASE PIN TO LOCK THE PIN INTO PLACE. ATTACH THE LIFTING TOOL TO AN APPROPRIATE TEST WEIGHT OF 10909 KG / 24000 LBS.
2. LIFT WEIGHT FOR AT LEAST 5 MINUTES, CONTINUALLY CHECKING FOR CRACKS, DEFLECTION, OR DISTORTION
3. REMOVE WEIGHT AND RE-INSPECT TOOL, CHECKING FOR STRESS CRACKS, BENDING, OR DISTORTIONS.

INSPECTOR: \_\_\_\_\_

TESTER: \_\_\_\_\_

S/N: \_\_\_\_\_

DATE: \_\_\_\_\_

**DAS**  
**40**  
**0-00**

*Michel Lalonde*

*5232681*

*2019-11-19*

DESIGN	KPT	<b>DART AEROSPACE LTD</b>	
DRAWN	KPT	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MBB	TOOL PART #	REV B
MFG. APPR.	JFC	<b>RB T102137-111</b>	SHEET 6 OF 6
APPROVED	<i>VP</i>	TITLE	SCALE
DATE	2019-06-20	<b>LIFTING TOOL</b>	NTS
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